IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: SOLUS *et al.* Appl. No. *To be assigned* (Divisional of 09/019,160; Filed: February 6, 1998) Filed: HEREWITH For: **Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof**	Art Unit: *To be assigned* Examiner: *To be assigned* Atty. Docket: 0942.4250003/RWE/BJD

Preliminary Amendment

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In advance of prosecution, please amend the application as follows.

This Amendment is provided in the following format:

(A) A clean version of each replacement paragraph/section/claim along with clear instructions for entry;

(B) Starting on a separate page, appropriate remarks and arguments. *See* 37 C.F.R. § 1.121 and MPEP 714; and

(C) Starting on a separate page, a marked-up version entitled: "Version with markings to show changes made."

In the Specification:

Please substitute the following paragraphs/sections for the pending paragraphs/sections.

Substitute the first full paragraph on page 1 (the Cross Reference section appearing at lines 4-9) with the following paragraph:

This application is a divisional of U.S. Application No. 09/019,160, filed February 6, 1998, which claims priority to U.S. Provisional Application No. 60/037,393, filed February 7, 1997, and to U.S. Provisional Application No. 60/070,562, filed January 6, 1998, the disclosures of which are fully incorporated herein by reference.

Substitute the fourth full paragraph on page 18 (appearing at lines 14-15) with the following paragraph:

FIGURES 10A-D are composites of a electropherogram gel scan of PCR amplifications at D16S405 and D16S401 loci.

Substitute the fifth full paragraph on page 18 (appearing at lines 16-17) with the following paragraph:

FIGURES 11A-B are composites of a electropherogram gel scan of PCR amplifications at D16S401 locus.

Substitute the sixth full paragraph on page 18 (appearing at lines 18-19) with the following paragraph:

FIGURES 12A-F are composites of a electropherogram gel scan of PCR amplifications at D15S127 and D15S153 loci.

Substitute the seventh full paragraph on page 18 (appearing at lines 20-21) with the following paragraph:

FIGURES 13A-C are composites of a electropherogram gel scan of PCR amplifications at D16S401 locus.

Substitute the second full paragraph on page 86 (appearing at lines 12-22) with the following paragraph:

Figure 9 shows two examples of electropherogram gel scans, aligned by PCR product size, comparing the PCR products obtained with *Taq* and *Tne* polymerases with a 10-minute final extension. For the D15S153 locus, *Taq* exhibited non-templated nucleotide addition to 40% of the PCR product (Figure 9A), while *Tne* exhibited no such addition of non-templated nucleotides (Figure 9B). Similar results were obtained with the D15S127 locus: 53% of the *Taq* PCR products demonstrated non-templated nucleotide addition (Figure 9C), while none of the *Tne* PCR products demonstrated non-templated nucleotide addition (Figure 9D). These results demonstrate the difficulty in identifying alleles in a heterogeneous pattern as generated by *Taq* amplification, compared to the more homogeneous, simple pattern generated by amplification with *Tne*.

Substitute the second full paragraph on page 87 (appearing at lines 11-21) with the following paragraph:

Reactions were loaded into a Perkin Elmer model 9600 thermocycler preheated to 95 °C and PCR was done using recommended cycling conditions (5 min. pre-denaturation at 95°C; 10 cycles of 15 sec at 95°C, 15 sec at 55 °C, and 60 sec at 72 °C; 20 cycles of 15 sec at 89 °C, 15 sec at 55 °C, and 60 sec at 72°C; 10min final extension at 72°C). A portion of each reaction was diluted, mixed with loading cocktail, heat denatured and loaded on an 8% sequencing gel. The ABI 373 Stretch Automated Sequencer was run for 5-6hr at 15W in order to obtain 1base resolution. Data was analyzed using GeneScan software. Areas of the peaks recognized by the software were used to estimate the percent of extranucleotide addition. Table 7 summarizes the results obtained. Examples of the electropherogram data are shown in Figures 10A-D.

Substitute the second full paragraph on page 88 (appearing at lines 11-21) with the following paragraph:

Reactions were loaded into a Perkin Elmer model 9600 thermocycler preheated to 95 °C and PCR was done using recommended cycling conditions (5 min. pre-denaturation at 95°C; 10 cycles of 15 sec at 95°C, 15 sec at 55 °C, and 60 sec at 72 °C; 20 cycles of 15 sec at 89 °C, 15 sec at 55 °C, and 60 sec at 72°C; 10min final extension at 72°C). A portion of each reaction was diluted, mixed with loading cocktail, heat denatured and loaded on an 8% sequencing gel. The ABI 373 Stretch Automated Sequencer was run for 5-6hr at 15W in order to obtain 1base resolution. Data was analyzed using GeneScan software. Areas of the peaks recognized by the software were used to estimate the percent of extranucleotide addition. Table 8 summarizes the results obtained. An example of the electropherogram data are shown in Figures 11A-B.

Substitute the second full paragraph on page 90 (appearing at lines 12-22) with the following paragraph:

Reactions were loaded into a Perkin Elmer model 9600 thermocycler preheated to 95 °C and PCR was done using recommended cycling conditions (5 min. pre-denaturation at 95°C; 10 cycles of 15 sec at 95 °C, 15 sec at 55 °C, and 60 sec at 72 °C; 20 cycles of 15 sec at 89 °C, 15 sec at 55 °C, and 60 sec at 72 °C; 10min final extension at 72 °C). A portion of each reaction was diluted, mixed with loading cocktail, heat denatured and loaded on an 8% sequencing gel. The ABI 373 Stretch Automated Sequencer was run for 5-6hr at 15W in order to obtain 1base resolution. Data was analyzed using GeneScan software. Areas of the peaks recognized by the software were used to estimate the percent of extranucleotide addition. Table 9 summarizes the results obtained. Examples of the electropherogram data are shown in Figures 12A-F.

Substitute the second full paragraph on page 91 (appearing at lines 15-25) with the following paragraph:

Reactions were loaded into a Perkin Elmer model 9600 thermocycler preheated to 95 °C and PCR was done using recommended cycling conditions (5 min. pre-denaturation at 95°C; 10 cycles of 15 sec at 95 °C, 15 sec at 55 °C, and 60 sec at 72 °C; 20 cycles of 15 sec at 89 °C, 15 sec at 55 °C, and 60 sec at 72 °C; 10min final extension at 72 °C). A portion of each reaction was diluted, mixed with loading cocktail, heat denatured and loaded on an 8% sequencing gel. The ABI 373 Stretch Automated Sequencer was run for 5-6hr at 15W in order to obtain 1base resolution. Data was analyzed using GeneScan software. Heights of the n and n+1 peaks recognized by the software were used to estimate the percent of extranucleotide addition. Table 10 summarizes the results obtained. An example of the electropherogram data are shown in Figures 13A-C.

In the Claims:

Please cancel claims 38 and 43-51, without prejudice to or disclaimer of the subject matter contained therein.

Remarks

None of the foregoing amendments adds new matter. These amendments are sought to update the priority information for the present application, to correct minor typographical errors in the text, and to bring the text of the specification into conformance with the formal drawings filed herewith, and do not change the scope of the claims. Accordingly, Applicants respectfully request that the foregoing amendments be entered and considered.

In accordance with 37 C.F.R. § 1.821, the computer-readable and paper copies of the sequence listing filed herewith are the same, and contain no new matter.

Summary

It is respectfully believed that this application is now in condition for immediate examination. Early notice to this effect is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Brian J. Del Buono
Attorney for Applicants
Registration No. 42,473

Date: June 7, 2001

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Version with markings to show changes made

In the Specification:

Please amend the first full paragraph on page 1 (the Cross Reference section appearing at lines 4-9) as follows:

This application is a divisional of U.S. Application No. 09/019,160, filed February 6, 1998, which claims priority to U.S. Provisional Application No. 60/037,393, filed February 7, 1997, and to [the] U.S. Provisional Application No. 60/037,393, [of Deb K. Chatterjee, Joseph Solus and Shuwei Yang, entitled "Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof,"] filed January 6, 1998, the disclosures of which are fully incorporated herein by reference.

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Claims 38 and 43-51 have been cancelled.

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In re application of:

SOLUS *et al.*

Appl. No. *To be assigned*
(Divisional of 09/019,160; Filed: February 6, 1998)

Filed: HEREWITH

For: **Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof**

Art Unit: *To be assigned*

Examiner: *To be assigned*

Atty. Docket: 0942.4250003/RWE/BJD

Letter to PTO Draftsman: Submission of Formal Drawings

Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith are twenty (20) sheets of formal drawings with Figures 1, 2A, 2B, 3-8, 9A/B, 9C/D, 10A/B, 10C/D, 11A/B, 12A/B, 12C, 12D/E, 12F, 13A/B, and 13C, corresponding to the informal drawings submitted with the above-captioned application. Identification of the drawings is provided in accordance with 37 C.F.R. § 1.84(c). Acknowledgment of the receipt, approval, and entry of these formal drawings into this application is respectfully requested.

It is not believed that an extension of time is required, other than any already provided herewith. However, if an extension of time is needed to prevent abandonment of the application, then such extension of time is hereby petitioned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036. A duplicate copy of this Letter is enclosed.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Brian J. Del Buono
Attorney for Applicants
Registration No. 42,473

Date: June 27, 2001

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